## Work Order ID 112736

QC

Quality Control

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\*112736\*

Page 1

Insp.

Stamp

February-06-14 10:48:21 AM Item ID: D3490-3 Accept \*N900040100\* Setup Start **Revision ID:** Item Name: Cross Bolt Spacer **Start Date:** 2/06/14 **Start Qty: 100.00 Cust Item ID:** .Required Date: 2/20/14 Req'd Qty: 100.00 **Customer:** Reference: Start Run Date: 14-02-06 Tooling: Process Plan: MLJ Approvals: Date: Stop Date: SPC (Y/N): Date: Sequence ID/ Operation Tool ID Tool # Plan Reject Reject Set Up/ Accept Work Center ID **Description** Code Qty Qty Number **Run Hours** Draw Nbr **Revision Nbr** D3490 Rev A 100 0.00 Hardinge CNC LATHE SMALL \*100\* Hardinge 0.00 Memo Hardinge CNC Lathe Small 1-TURN AS PER FOLIO FA629 & DWG D3490 FOLIO REV: AA DWG REV: A 2-DEBURR AS REQUIRED 110 QC2- Inspect parts off machine FAI/FAIB 0.00 \*110\* QC 0.00 Memo Quality Control 120 QC8- Inspect parts - second check 0.00 \*120\*

0.00

Memo

DQA:			Date:											
*			·			WORK ORDER NON-CONFORMANCE / UPDATE						**************************************		
QA Closed:			Date:						•		W	ork Order up	odate only	7
Work Orde	er:					DISPOSITION		AGAINST DEPARTMENT/PROCESS						,
				Rework			Skid-tube Crosstube				Water Jet	Engineering		
Part I	۷ο. ـ					Scrap	]		Machining	Small Fab		Pro	d. Eng. Coor.	Quality
NCR 1	No					Use-as-is Suspected Unapproved		Thern	noforming Large Fab	Finishing Composite		Rec/Sto	re/Packaging Supplier	Other
Root					Desc	ription of work order update		nitial	Ac	tion		Sign &		
Cause		Date	Step	Qty		or non-conformance	Ch	ief Eng	Desc	ription		Date	Verification	QC Inspector
Design										etg(I				
Doc/Data														
Equip/Tooling									Į					
Handling/Pre														
Material														
Operator	Ш													
Offset/Setup									•					
Process														
Supplier	Ц	,												
Training .	Щ													
Transport	Щ													
Unapproved		-												
			·				FA	ULT CAT	regory					
Landi	_					General		1				1	_	_
	-	Bending				Bend		•	Program		L	Outside Dim	<b>⊢</b>	Pressure/Forced
	-	Centre No	ot Concer	ntric		BOM/Route	_	Grain			_	Over/Under	<b>⊢</b> -	Set-up
	Ь——	Cracks			$\vdash$	Broken/Damage/Defect	<u></u>	Hardwa			L_	Part Incorred	<del></del>	Temperature/Cure
	_	Crimp/Kir	ık/Ripple	/Wave		Burrs	$\vdash$	1	ion Incomplete/U			Part Lost/Mi	· ·	Weld
	Н	Cuffs			-	Contamination	<u> </u>	1	ions Incomplete/	Unclear	<u> </u>	Part Moved	<u> </u>	Wrong Stock Pulled
	-	Crushing			$\vdash$	Countersink		1 -	ned/off center		_	Positioned V		_,
	$\vdash$	Heat Trea			<u> </u>	Cut Too Short	<u></u>	Mislabe			L	Power Loss/	Surge	Other
	-	Inspection	•	Tube	_	Drawing	<u> </u>	Misread						
	-	Marks/Ch			<u> </u>	Drill Holes	$\vdash$	Off-set				-		
l	-	Turning S	•			Finish		1	Calibration				· · · · · · · · · · · · · · · · · · ·	
	L İ	Wave/Tw	ist in Tub	e		Fit/Function		Out of S	Sequence					

H:/FORMS/Quality Assurance\approved QA/NCRWO RevH

## \*112736\*

Page 2

Item, ID: D3490-3
Revision ID:

Required Date: 2/20/14

February-06-14 10:48:21 AM

Accept

\*N900040100\*

Setup Start

\*NQ1\*

NS2\*

Start Date:

Item Name:

2/06/14

Cross Bolt Spacer

**Start Qty:** 100.00 **Req'd Qty:** 100.00

\*100\*

Date:

Cust Item ID:

Tool ID

**Customer:** 

Reference:

Approvals:

Process Plan:

QC:

\_\_\_\_\_ Date:

Tooling:

ıg:

Date:

Start

\*NR1

SPC (Y/N):

Date:

**Qty** 

Run

Stop \*N

Sequence ID/

Work Center ID

Description
Identify as per dwg & Stock Location: 4

Operation

Set Up/ Run Hours

Tool # Plan Code Accept Qty

Reject Reject

100 × 14-02-24

Reject Insp. Number Stamp

\*130\*

130

Packaging

Memo

0.00

0.00

Packaging

CLEAN CROSSBOLT SPACER WITH ALUMINUM CLEANNER

\*\*\*STOCK IN SKIDTUBE CELL\*\*\*

140

QC21- Final Inspection - Work Order Release

0.00

\*140\*

QC

Memo

0.00

MUJ 14-02

Quality Control

MF 2-26

5.5

DQA:		_ Date:			MODIC ODDED MON							DART
QA Closed:		Date:			WORK ORDER NON-	-CC	ONFO	RMANCE / UP		ork Order up	odate only	AEROSPACE
Mark Onda					DISPOSITION				AGAINST D	EPARTMENT,	/PROCESS	
Work Orde	:r. ————			— j	D	.		s [		٦		, <b>.</b>
Part N	10				Rework			Skid-tube	Crosstube		Water Jet	Engineering
raitiv					Scrap Use-as-is			Machining noforming	Small Fab		d. Eng. Coor.	Quality
NCR N	lo			1	Suspected Unapproved		men	Large Fab	Finishing Composite	H Kec/Stor	re/Packaging Supplier	Other
NCIVIX				_	Juspected Ollappioved			Large Fab	Composite		3uppner	_
Root				Descr	ription of work order update		nitial	Actio	on	Sign &		
Cause	Date	Step	Qty		or non-conformance	Ch	ief Eng	Descri	ption	Date	Verification	QC Inspector
Design												-
Doc/Data									•			
Equip/Tooling										'		
Handling/Pre												
Material			]							1		
Operator												
Offset/Setup												
Process												
Supplier												
Training			1									
Transport												
Unapproved		<u> </u>			***					<u> </u>		
			•	_		FA	ULT CA	TEGORY				
Landir	ng Gear			_	General		1		<b>_</b>	7	r	
	Bending			<u> </u>	Bend			Program	_	Outside Dim	<del> </del>	Pressure/Forced
	Centre N	ot Concei	ntric	<u> </u>	BOM/Route		Grain			Over/Under	tolerance	Set-up
	Cracks			-	Broken/Damage/Defect		Hardwa		<u> </u>	Part Incorred	<u> </u>	Temperature/Cure
	Crimp/Ki	nk/Ripple	e/Wave		Burrs		1	ion Incomplete/Und	· –	Part Lost/Mi	ssing	Weld
}	Cuffs			<u> </u>	Contamination	<u> </u>	1	tions Incomplete/U	nclear	Part Moved	L	Wrong Stock Pulled
	Crushing			<u> </u>	Countersink	<u> </u>	1	gned/off center	<u> </u>	Positioned V		_
	Heat Trea			<u> </u>	Cut Too Short	$\vdash$	Mislabe		L	Power Loss/	Surge	Other
	Inspectio	· ·	Tube	<u> </u>	Drawing	<u> </u>	Misrea			<del></del>		· · · · · · · · · · · · · · · · · · ·
	Marks/Cl				Drill Holes	$\vdash$	Off-set					
	Turning S			<u> </u>	Finish	<u> </u>	ł	Calibration				
	Wave/Tw	vist in Tul	oe e	1	Fit/Function ,		Out of :	Sequence				

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February-06-14 10:48:27 AM

Work Order ID: 112736

\*112736\*

Parent Item:

D3490-3

\*D3490-3\*

Parent Item Name: Cross Bolt Spacer

**Start Date: 2/06/14** 

Required Date: 2/20/14

**Start Qty: 100.00** 

Required Qty: 100.00

**Comments:** 

IPP Rev:A

New Issue 06-03-03 JLM

Component Item ID/ Item Name	Replacement Item ID	Mfg/ Purch	Bin Item	Primary Location	Last Location	Route Seq ID	Unit of Measure	Qty on Hand	Qty per Kit	Total Qty	Qty Issued	Date Issued	Status
M6061T6R0.750		Purchased	No			100	f	62.1311	0.266	28	·		
*N/6061T6	D0 750	*							**				

\*M6061T6R0 750\*

6061-T6 Round Bar .750"

Location Loc Qty Loc Code MAT012 62.131052 62.131052 m126852

28 OFC 2014-02-13

DQA:			Date:											*	TOAC
						WORK ORDER NON-CONFORMANCE / UPDATE									
QA Closed:			Date:								Wo	rk Order up	date only		
Work Orde	er:					DISPOSITION AGAINST (			DEPARTMENT/PROCESS						
						Rework	]		Skid-tube	Crosstube			Water Jet[		Engineering
Part No.				Scrap			Machining	Small Fab		Prod. Eng. Coor.			Quality		
					Use-as-is		Thern	noforming	Finishing			e/Packaging		Other	
NCR N	No			<del></del>		Suspected Unapproved	]		Large Fab	Composite [			Supplier		
Root					Desci	ription of work order update		nitial	Act	ion		Sign &			
Cause	_	Date	Step	Qty		or non-conformance	Ch	ief Eng	Descr	ription		Date	Verification	,	QC Inspector
Design															
Doc/Data															
Equip/Tooling														-	
Handling/Pre	_														
Material															
Operator														l	
Offset/Setup															
Process			:												
Supplier						;									
Training	_													ŀ	
Transport	_						l								
Unapproved															
							FAI	ULT CAT	EGORY						
Landir						General		,		-			-		
		ending			_	Bend	<u> </u>	1	rogram			Outside Dim	ensions	Pr	essure/Forced
			t Concer	ntric	<u> </u>	BOM/Route	L	Grain				Over/Under	tolerance	Se	t-up
		racks				Broken/Damage/Defect	<u> </u>	Hardwa				Part Incorrec	t _	Te	mperature/Cure
	_		k/Ripple	/Wave	-	Burrs	┕	1	on Incomplete/Ur	· · · · · · · · · · · · · · · · · · ·		Part Lost/Mi	ssing	\w <sub>'</sub>	eld
		uffs				Contamination	<u> </u>	1	ions Incomplete/L	Inclear	_	Part Moved		\W <sub>1</sub>	rong Stock Pulled
		rushing			<u> </u>	Countersink		1 -	ned/off center		_	Positioned <b>W</b>		,	
	—	eat Trea			<u> </u>	Cut Too Short		Mislabe				Power Loss/	Surge	Ot	her
ļ			Strip in	Tube	<u> </u>	Drawing	<u> </u>	Misread	I		_				
	_	larks/Ch			<u> </u>	Drill Holes	_	Off-set			_	Mg "			
	_	urning Se				Finish	<u> </u>	1	Calibration		_	· · · · · · · · · · · · · · · · · · ·			
	W	/ave/Twi	st in Tub	e		Fit/Function	1	Out of S	iequence						

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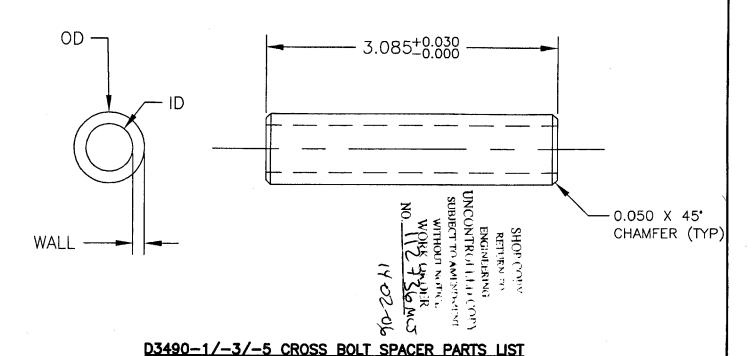
DART AEROSPACE LTD	Work Order:	112736
Description: Crossbolt Spacer	Part Number:	D3490-3
Inspection Dwg: D3490 Rev: A		Page 1 of 1

	FIRS	T ARTICLE II	NSPECTI	ON CHE	CKLIST		
		K First Arti	icle	Prote	otype		
Drawing Dimension	Tolerance	Actual Dimension	Accept	Reject	Method of Inspection		nments
3.085	+0.030/-0.000	3-102					
0.080	+/-0.010	0.077					
Ø0.591	+0.008/-0.001	0.512					
0.050 x 45°	+/-0.010 x 0.5°	0.050					
,							
Measured by:	AT TO	Audited by:	+	0A\$* 40	Prototype	Approval	N/A
Date:	14-02-12	Date:	<del>                                     </del>	14/02/13		Date:	N/A
Rev Date	Change		II Cally	- 1/24 H		Revised by	Approve/d

Rev	Date	Change	Revised by	Approved
Α	06.10.27	New Issue	KJ/JLM 🛠	
			<del></del>	



	DESIGN	PH	DRAWN BY	DART	AEROSPACE PORT HADLOCK, W	
	CHECKE	H	APPROVED 4	DRAWING NO. D3490		REV. A SHEET 1 OF 1
	OATE			TITLE		SCALE
L	06.01	.04		CROSS BOL	T SPACER	NTS
	Α		06.01.04	NFW ISSUE		



PART NUMBER	OD	WALL	ID (REF)	MATERIAL SPEC
D3490-1	0.500	0.049	0.402	M6061T6T0.500W.049
D3490-3	0.750	0.080	0.591	M6061T6R0.750
D3490-5	0.313	0.058	0.197	M6061T6T0.313W.058

## D3490-1/-3/-5 CROSS BOLT SPACER

- 1) MATERIAL: ALUMINUM 6061-T6 (QQ-A-200/8 OR QQ-A-225/8)
- 2) ALL DIMENSIONS ARE IN INCHES
- 3) TOLERANCES ARE PER DART QSI 018 UNLESS OTHERWISE NOTED



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